Pinnotheres malaguena Garth, 1948, a new member of the genus Fabia Dana, 1851 (Crustacea: Brachyura: Pinnotheridae)

Ernesto Campos and Raymond B. Manning

(EC) Facultad de Ciencias, Universidad Autonoma de Baja California, Apartado Postal 2300, Ensenada, Baja California, 22800 México;

(RBM) Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560-0163, U.S.A.

Abstract.—The original description and figures of the male holotype of the pinnotherid crab *Pinnotheres malaguena* Garth are emended. The morphology of this species excludes it from *Pinnotheres* Bosc, 1802 but supports its transfer to the genus *Fabia* Dana, 1851. *Fabia malaguena* can be distinguished from other members of *Fabia* by its unique gonopod shape and its abdomen, which has somites 5 to the telson fused.

The pinnotherid crab species Pinnotheres malaguena Garth, 1948 was described on the basis of an adult male collected in Málaga Bay, Colombia [Málaga = 6°44′N, 72°45'W] (Garth 1948). Gore (1986) and Campos (1996), based on Garth's account, suggested that P. malaguena may belongs in the genus Fabia Dana, 1851. Our study of the male holotype, deposited in the American Museum of Natural History (AMNH), allows us to confirm this. The morphology of P. malaguena does not agree with Pinnotheres sensu stricto (see Manning 1993 for the characteristics of that genus), but it largely concurs with those of the genus Fabia.

In addition to transferring *P. malaguena* to *Fabia*, we emend its original description (underlined in the text) and figures, since several mistakes and omissions in the original account were detected. Other abbreviations used are WL = walking legs; MXP3 = third maxilliped.

Fabia malaguena (Garth, 1948), new combination (Fig. 1)

Pinnotheres malagueña Garth, 1948:53-55, fig. 5.

Pinnotheres malaguena.—Silas & Alagarswami, 1967:1202, 1218.—Schmitt et al., 1973:56.—Gore, 1986:147.—Lemaitre & Alvarez León, 1992:61.—Hendrickx, 1995:142.—Campos, 1996:1161.

Distribution.—Known only from the type locality, Málaga Bay, Colombia, in 4–9 m depth (Garth 1948).

Material examined.—Male holotype (AMNH 10012).

Measurements.—Carapace length 2.6 mm, width 2.3 mm; frontorbital width 1.1 mm; length of chela 1.1 mm, of dactyl 0.5 mm; length of manus 0.6 mm (after Garth 1948).

Redescription.—Carapace (Fig. 1A) slightly longer than broad, widest at middle, suboctagonal, angles rounded, dorsal surface smooth and bare, porcelain-like, strongly convex, without indications of regions, frontal and anterolateral margins clothed with shaggy hair-like setae. Front advanced considerably beyond orbits, its edges representing a continuation of anterolateral margins interrupted only by sinuous indentation of orbits. Anterior margin subtruncate, appearing bilobed, edges concealed by fringing setae. Anterolateral margin longer than posterolateral, sloping at fairly steep angle from

VOLUME 111, NUMBER 4

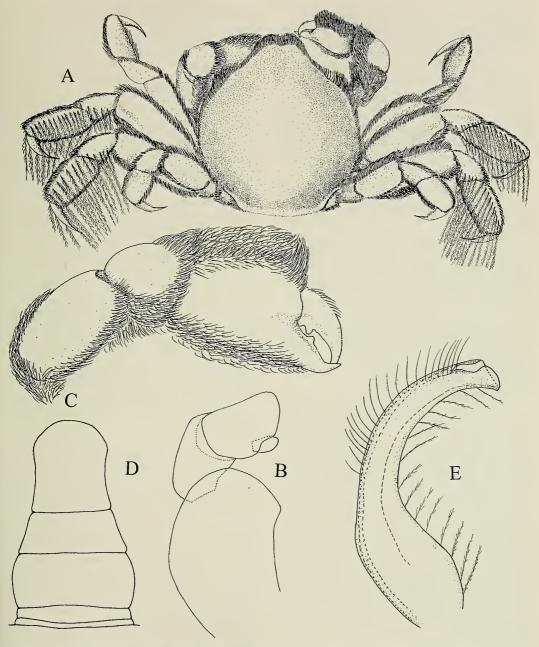


Fig. 1. Fabia malaguena (Garth, 1948), male holotype (AMNH 10012). Carapace length 2.6 mm, width 2.3 mm. A, Dorsal view; B, MXP3; C, Right chela, outer face; D, Abdomen; E, Gonopod. Setae omitted in Fig. 1B, D.

the orbits, their gentle arching accentuated by a thick fringe of fur-like pile, longest medially. A suggestion of short, transverse line of hairs at gastric level. Posterior margin almost straight, rimmed and bare. Orbits small and circular, eyestalks short, eyes filling sockets, corneas when retracted concealed by setae in dorsal view. Antenna short, basal article hiatus, flagellum only extending beyond margin of front.

MXP3 (Fig. 1B) nearly transverse in position, gently convex distally, carpus longer than wide, cylindrical, curving inward and broadening distally; propodus subequal to carpus in length, flattened and broadened medially, outer surface lacking neither row of setae nor transverse ridge as described and figured in original account; dactylus small, digitiform, placed in angular notch in middle third on ventral margin of propodus, and falling short of end of propodus.

Chelipeds (Fig. 1C) stout, equal, merus and carpus fringed with setae above and below, leaving a smooth, bare space between; chela with similar open area, fringing setae as dense as those of anterolateral margins of carapace, forming superior crest. Fingers slender, thin, tapering distally, sharply pointed, dactylus curving strongly downward, pollex little deflexed, both fingers with subtruncated tooth proximally placed on cutting edge, a few long setae visible in narrow gape, tips crossing until pointed in almost opposite directions.

Sternal plastron flattened at center, slightly concave towards margins, latter fringed with setae, segmentation clearly indicated. Male abdomen (Fig. 1D) widest at third somite, sides of latter broadly rounded, tapering to narrowest point at middle of fused fifth somite to telson, then broadening slightly before the semicircular tip which is edged with fine setae (omitted in Fig. 1D). Gonopod (Fig. 1E) cylindrical, sickle shaped, tapering gradually from base almost to gutter-like tip which flares slightly and divided longitudinally for short distance along its length; margins setose, long plumose setae extending to base of appendage externally.

WL (Fig. 1E) symmetrical, laterally compressed, with exception of dactyli, margins covered with fringe of furry setae; WL1 twisted, WL 2–3 with two fringes of long swimming setae, one on outer face of carpus and propodus, one on ventral margin of propodus. Meri subequal in shape and width; carpi trigonal, slender proximally, broadening distally; propodi widest at mid-

point, obliquely rounded distally; dactyli long, tapering abruptly to sharp, transparent, curved nails, prehensile edge smooth. Relative length of WL 2 > 3 > 1 > 4.

Remarks.—The following features support the inclusion of the male of Pinnotheres malaguena in the genus Fabia: the carapace is convex, smooth, shiny, porcelain-like; the frontorbital and anterolateral margins with stout, hair-like setae; MXP3 with a subtrapezoidal propodus subequal to the cylindrical carpus, and digitiform dactylus inserted in the middle third on the ventral margin of the former article; WL1 are twisted and margins of the compressed WL1-4 are covered with a fringe of hairlike setae; and the abdomen with somites 1-4 free, 5 to the telson fused. Males in the genus Pinnotheres have the dactylus of MXP3 styliform, inserting basally on the ventral margin of the propodus and all of the abdominal somites and telson free.

Fabia malaguena can be separated from other species of the genus Fabia by its singular gonopod shape (Fig. 1E) and because abdominal somites 5 to the telson are fused (Fig. 1D).

Acknowledgments

We are indebted to Lara L. Tolchin, American Museum of Natural History, for the loan of the holotype of *Pinnotheres malaguena* (Garth, 1948); and to Alma Rosa de Campos for her fine artistic work. This work was partially supported by the project UABC-CONACyT 3587-N9311, and the program 0134-UABC "Systematics of the symbiotic crustaceans of the Mexican Pacific." This is contribution #447 from the Smithsonian Marine Station at Fort Pierce; support of that program for Manning's studies on pinnotherids is gratefully acknowledged.

Literature Cited

Bosc, L. A. G. 1802. Histoire naturelle des Crustacés, contenant leur description et leurs moeurs, avec figures dessinées d'après nature. Paris, 1:1–258, pls. 1–8; 2:1–296, pls. 9–18.

- Campos, E. 1996. Partial revision of the genus Fabia Dana, 1851 (Crustacea: Brachyura: Pinnotheridae).—Journal of Natural History 30:1157– 1178.
- Dana, J. D. 1851. On the classification of the Crustacea Grapsoidea.—American Journal of Science and Arts, series 2, 12:283–291.
- Garth, J. S. 1948. The Brachyura of the "Askoy" expedition with remarks on carcinological collecting in the Panama Bight.—Bulletin of the American Museum of Natural History 92(1):1–66
- Gore, R. H. 1986. Fabia felderi species novum, a new pinnotherid crab from the central eastern coast of Florida (Crustacea: Decapoda: Brachyura).— Northeast Gulf Science 8:143–148.
- Hendrickx, M. E. 1995. Checklist of brachyuran crabs (Crustacea: Decapoda) from the eastern tropical Pacific.—Bulletin de l'Institut Royal des Sciences naturelles de Belgique, Biologie, 65:125–150.
- Lemaitre, R., & R. Alvarez León. 1992. Crustáceos

- decápodos del Pacífico Colombiano: lista de especies y consideraciones zoogeográficas.—Anales del Instituto de Investigaciones Marinas de Punta de Betín 21:33–76.
- Manning, R. B. 1993. West African pinnotherid crabs, subfamily Pinnotherinae (Crustacea, Decapoda, Brachyura.—Bulletin du Muséum national d'Histoire naturelle, series 4, 15(A, 1-4):125–177
- Silas, E. G., & K. Alagarswami. 1967. On an instance of parasitisation by the pea-crab (*Pinnotheres* sp.) on the backwater clam [*Meretrix casta* (Chemnitz)] from India, with a review of the work on the systematics, ecology, biology and ethology of pea crabs of the genus *Pinnotheres* Latreille.—Proceedings of the Symposium on Crustacea held at Ernakulam from January 12 to 15, 1965. Marine Biological Association of India, Symposium series 2, 3:1161–1227.
- Schmitt, W. L., J. C. McCain, & E. S. Davidson. 1973. Family Pinnotheridae. Decapoda I, Brachyura I. In H. E. Gruner & L. B. Holthuis, eds. Crustaceorum Catalogus 3:1–160. Den Haag, W. Junk.